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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,000	11/29/2001	Winfried Rauer	235.021US1	3910
21186	7590	08/08/2005	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402-0938			LIU, SHUWANG	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/998,000	RAUER ET AL.	
	Examiner	Art Unit	
	Shuwang Liu	2634	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 April 2002.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>06/05/02, 08/25/04</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Specification*

1. The abstract of the disclosure is objected to because (9;316) in last line should be changed to (116;316). Correction is required. See MPEP § 608.01(b).

### *Claim Objections*

2. Claims 1-32 are objected to because of the following informalities:
  - (1) Claims 1 and 11 sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation, 37 CFR1.75(i);
  - (2) Claims 21 and 26 are objected to because the elements of the method claim are not recited as steps. The elements of a method claim are steps, which should usually be verbal phrases introduced by a gerund or verbal noun (the "-ing" form of a verb);
  - (3) In claims 1 and 11, line 3, delete 'and including';
  - (4) In claim 2, line 2, "wherein" should be changed to - further comprising- -, "the instantaneous" should be changed to - an instantaneous- -, delete "is present", and change "and" to - wherein- -;
  - (5) In claim 2, line 3, change " the current control unit" to - a- - and delete "a";
  - (6) In claim 2, line 4, insert "sets" before "as";
  - (7) In claim 4, line 2, change "and" to - the- -
  - (8) In claims 6 and 7, line 2, "wherein" should be changed to - further comprising- -;
  - (9) make corresponding changes for other claims.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, 3, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 13 recite the limitation "said device" in line. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether "said device" refers to "measuring device", "controlling device", or "device for determining"

Regarding claim 3, the phrase "may be given" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed, thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). Furthermore, it is unclear what "the input current" refers to.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1-4, 6-14, 16-24 and 26-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Zyl (US 5,416,723, see IDS).

As shown in figures 1 and 2, Zyl discloses an electronic measuring device for detecting a process variable connectable to a two-wire line for providing the supply energy and for digital communication with a process control, and for this purpose in particular, comprising

(1) regarding claims 1, 11 and 26:

a two-wire terminal (A and B);

a sensor means (10, 12, ..) for measuring the process variable (claim 1);

a controlling device (2, 4, 6, 8) for controlling components of the sensor means;

a voltage measuring device (24) for measuring the supply voltage applied

through the two-wire line (column 4, lines 20 and figure 2, claim 4), and

a current control unit (16) by means of which the current for supplying the measuring device can be appropriately set as a function of the supply voltage measured by the voltage measuring device.

(2) regarding claim 21:

A method for operating an electronic measuring device for detecting a process variable connectable to a two-wire line (A and B) for providing the supply energy and for digital communication (column 3, lines 29-39) with a process control (2), wherein the supply voltage applied through the two-wire line is measured in the measuring device, and the current for supplying the measuring device is modified in a temporally appropriate manner (c8 and figure 2) as a function of the supply voltage measure by the

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voltage measuring device (column 4, line 57-column 5, line 22 and column 5, lines 49-64).

(3) regarding claims 2, 4, 13 and 14:

a device (c8) for determining an instantaneous power loss as recited in claims (column 4, line 58-column 5, line 22).

(4) regarding claims 3:

wherein a pre-given maximum value is 20ma (16).

(5) regarding claims 6, 16 and 30:

a device (10) is present by means of which the frequency of occurrence of sensor excitements can be determined without performing a measurement (column 4, lines 1-19).

(6) regarding claims 7 and 17:

further comprising a current limit (14, R1, D9 and D10) (column 3, lines 29-38 and column 4, lines 14-19).

(7) regarding claims 8, 10, 18, 20, 28, and 29:

wherein power loss as recited in claims is disclosed in column 4, line 37-column 5, line 22 and claim 4.

(8) regarding claims 9 and 19:

It is inherent that a power loss due to a power demand excess is transformed into heat.

(9) regarding claims 12 and 27:

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wherein the current control unit includes two controls, one keeping the total current constant, and one providing for the fact that a little current is flowing through a shunt arm at all times (column 4, lines 38-56).

(10) regarding claim 22:

wherein the voltage drop is measured at a resistor (R53) for determining an instantaneous power loss.

(12) regarding claim 23:

It is inherent the power loss is determined for determined an power input because the power loss is determined by the power output and the power input.

(13) regarding claims 24 and 31:

wherein said method is realized in a measuring device including a sensor means, in which the distance from a filling product surface of a filling product present in a receptacle is measured by means of ultrasonic pulses (column 2, line 66-column 3, line 7, column 3, lines 29-39 and column 4, lines 1-19).

7. Claims 1, 5, 21, 25, 26 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Fehrenbach et al. (US 6,014,100).

As shown in figure 1, Fehrenbach et al. discloses an electronic measuring device for detecting a process variable connectable to a two-wire line for providing the supply energy and for digital communication with a process control, and for this purpose in particular, comprising

(1) regarding claims 1 and 11:

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a two-wire terminal (20);  
a sensor means (10) for measuring the process variable;  
a controlling device (51) for controlling components of the sensor means;  
a voltage measuring device (41) for measuring the supply voltage applied through the two-wire line, and

a current control unit (71 and 50) by means of which the current for supplying the measuring device can be appropriately set as a function of the supply voltage measured by the voltage measuring device.

(2) regarding claims 21 and 26:

A method for operating an electronic measuring device for detecting a process variable connectable to a two-wire line (20) for providing the supply energy and for digital communication (72) with a process control (51), wherein the supply voltage applied through the two-wire line is measured in the measuring device, and the current for supplying the measuring device is modified in a temporally appropriate manner (42 and 40) as a function of the supply voltage measure by the voltage measuring device (figure 1 and claim 1).

(3) regarding claims 25 and 32:

wherein said method is realized in a measuring device including a sensor means, in which the distance from the filling product surface of a filling product present in a receptacle is determined by means of radar pulses (column 4, lines 25-38 and column 1, lines 11-40).



***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fehrenbach et al. in view of Zyl (US 5,416,723).

As shown in figure 1, Fehrenbach et al. further comprising: A/D converter (66) coupled with the micro-controller (51), and a capacitor (inside 43 or 42) connected upstream with an Radar transmitter (62) for store energy for the sensor means.

Fehrenbach et al. discloses all of the subject matter as described above except for specifically teaching an ultrasonic transmitter as claimed.

Zyl, in the same field of endeavor, teaches a measuring device comprising the ultrasonic transmitter (10) to transmit ultrasonic wave.

It would be desirable to have a high resolution for the range measurement and low interference with electromagnetic wave by using a ultrasonic wave in the filling level measurement. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the radar transmitter of Fehrenbach et al. by the ultrasonic transmitter as taught by Zyl in order to allow reduce the interference with other electromagnetic wave. In doing so, the resolution of the measurement will be improved.

**Conclusion**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is 571 272-3036. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shuwang Liu  
Primary Examiner  
Art Unit 2634

July 27, 2005